

## CLAIMS

We claim:

- 1        1. A drill adapter for an ice augur, comprising:
  - 2            a receiver tube having a cylindrical wall, and upper and
  - 3            lower ends, the lower end of the receiver tube being adapted for
  - 4            coupling with an ice auger shaft;
  - 5            an end cap having a substantially cylindrical shape, a
  - 6            bottom end, a top end, and an axial bore, the end cap being
  - 7            coupled with the upper end of the receiver tube; and
  - 8            a drill driver bit disposed in the axial bore of the end
  - 9            cap, the bit being adapted for use with a portable drill.

1           2.    The drill adapter according to claim 1, wherein said  
2 receiving tube has a groove defined therein, the adapter further  
3 comprising:

4           a disk-shaped floating shield having a center aperture  
5 defined therein, the center aperture having a diameter greater  
6 than said receiving tube;

7           a C-ring clip removably inserted into the groove defined in  
8 said receiving tube; and

9           a collar extending around a portion of said end cap;

10          wherein when the C-ring clip is disposed in the groove in  
11 said receiving tube and said floating shield is disposed around  
12 said receiving tube with said floating shield being positioned  
13 above the C-ring clip and below the collar, said floating shield  
14 spins freely around said receiving tube independent of rotation  
15 of said receiving tube and the auger, so that said floating  
16 shield is capable of remaining stationary while said receiving  
17 tube and the ice auger are spinning.

1           3.    The drill adapter according to claim 1, wherein said  
2   end cap has a threaded bore defined therein, the adapter further  
3   comprising a setscrew removably extending through the threaded  
4   bore into the axial bore in order to temporarily secure the  
5   drill driver bit to the adapter.

1           4.    The drill adapter according to claim 1, wherein said  
2   receiver tube has first and second aligned apertures defined  
3   therein, the adapter further comprising:

4           a locking pin adapted for insertion through said first and  
5   second apertures in said receiving tube, the locking pin being  
6   adapted for insertion through an aperture defined in the ice  
7   auger in order to retain the ice auger in said retainer tube;  
8   and

9           an internal spring disposed in said receiver tube between  
10   the locking pin and said end cap for cushioning vibration.

1        5. The drill adapter for an ice auger according to claim  
2 1, further comprising:

3        an extension tube having an upper and a lower end, a  
4 support plug disposed therein, first and second upper apertures  
5 defined therein, first and second lower apertures defined  
6 therein, and an internal spring depending from said support  
7 plug, the upper end of the extension tube being removably  
8 inserted into the lower end of said receiver tube, and the lower  
9 end of the extension tube being adapted for receiving the ice  
10 auger shaft;

11        a first lock pin removably inserted through the first and  
12 second apertures of the extension tube and through the lower end  
13 of said receiver tube in order to temporarily secure the  
14 extension tube to said receiver tube; and

15        an extension locking pin removably inserted through the  
16 first and second lower apertures and the ice auger in order to  
17 temporarily secure the ice auger to the extension tube.

1           6. A drill adapter for an ice auger, comprising:  
2           a receiver tube having a cylindrical wall, an upper and  
3 lower end, a groove and a first and second aperture; said lower  
4 end of said receiver tube adapted for coupling with the top of  
5 an ice auger shaft;  
6           an end cap having a substantially cylindrical shape, a  
7 bottom, a top, an axial bore adapted to receive a drill driver  
8 bit, a collar, and a threaded aperture extending from said bore;  
9 said end cap adapted for coupling with said upper end of said  
10 receiver tube;  
11           a drill driver bit adapted for use with a drill;  
12           a floating shield in the shape of a disk with a center  
13 aperture, said center aperture having a diameter greater than  
14 the outside diameter of said receiving tube;  
15           a C-ring clip adapted for coupling in said groove in said  
16 receiving tube;  
17           a setscrew dimensioned for use in said threaded aperture in  
18 said end cap;  
19           a locking pin adapted for insertion through said first and  
20 second apertures in said receiver tube; and

21 an internal spring extending downward from said bottom of  
22 said end cap;

23 wherein said end cap is coupled with said upper end of said  
24 receiver tube; said drill driver bit is disposed in said axial  
25 bore of said end cap; said C-ring clip is disposed in said  
26 groove in said receiver tube and said floating shield is  
27 disposed around said receiver tube, said floating shield being  
28 positioned above said C-ring and below said collar extending  
29 around a portion of said end cap, and said setscrew is screwed  
30 into said threaded aperture;

31 whereby said floating shield spins freely around said  
32 receiving tube such that said floating shield can remain  
33 stationary while said receiving tube and the ice auger are  
34 spinning;

35 whereby tightening said setscrew secures said drill driver  
36 bit in said bore in said end cap, and loosening said setscrew  
37 permits removal and replacement of said drill driver bit;

38 whereby, when the top of an ice auger shaft is inserted  
39 into said lower end of said receiving tube such that said first  
40 and second apertures in said receiving tube align with the  
41 aperture in the top of the ice auger shaft, and said locking pin  
42 is inserted through said first aperture in said receiving tube,

43 through the aperture in the ice auger shaft and through said  
44 second aperture in said receiving tube, then said drill adapter  
45 for an ice auger is coupled with the ice auger; and

46 whereby when said lower end of said receiver tube is  
47 coupled with the top of an ice fishing auger shaft and said  
48 drill driver bit is coupled with a power drill, said drill  
49 adapter for an ice auger allows an ice auger to be powered by a  
50 power drill.

1        7. The drill adapter for an ice augur according to claim  
2 6, further comprising:

3        an extension tube having an upper and lower end, a support  
4 plug disposed therein, a first and second upper aperture, a  
5 first and second lower aperture, and an internal spring  
6 depending from said support plug; said upper end adapted for  
7 insertion into said lower end of said receiver tube and said  
8 lower end adapted for coupling with the top of an ice auger  
9 shaft; and

10       an extension locking pin adapted for insertion through said  
11 first and second lower apertures;

12       whereby said lower end of said extension tube is coupled  
13 with the top of an ice fishing auger by inserting said extension  
14 locking pin through said first lower aperture, through the  
15 aperture in the top of an ice auger shaft and through said  
16 second lower aperture; and said upper end of said extension tube  
17 is coupled with said lower end of said receiver tube by  
18 inserting said locking pin through said first aperture in said  
19 receiver tube, through said first and second lower apertures,  
20 and through said second aperture in said receiver tube;



21       whereby, when said lower end of said extension tube is  
22 coupled with the top of an ice auger shaft and said upper end of  
23 said extension tube is coupled with said lower end of said  
24 receiver tube, said extension tube extends the distance between  
25 the ice auger and the drill thereby allowing the ice auger to be  
26 lowered deeper into a layer of ice.